

DOCKET NO: 241188US0

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
ISAO TSURU, ET AL. : EXAMINER: SHOSHO, C. E.  
SERIAL NO: 10/633,705 :  
FILED: AUGUST 5, 2003 : GROUP ART UNIT: 1714  
FOR: WATER-BASED INK :

DECLARATION UNDER 37 C.F.R. § 1.132

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

Sir:

Now comes Isao Tsuru who deposes and states that:

1. I am a graduate of Japan Advanced Institute of Science and Technology and received my Master degree in the year 1996.
2. I have been employed by Kao since 1996 and I have been conducting research in the field of Ink for Inkjet for 8 years.
3. I have reviewed and understood the rejection of the Office Action of January 12, 2006.
4. In order to demonstrate the significantly superior properties of an aqueous dispersion containing a water-insoluble vinyl polymer which contains polymerized units of monomers that include the monomer (B) and the macromeric monomer (D) recited in the presently presented claims, the following experiments were carried out by me or under my direct supervision and control.

5. The examples of the present specification were carried out as described in the specification as originally filed. The angular dependency of color tone was measured for each sample. The results of a-value at light intercepting angle of 45° are as follows:

Example 1 - 39

Example 2 - 35

Example 3 - 30

6. A low angular dependency of color tone means that a color different from the original color of the pigment appears on the surface when a printout made from an ink containing the composition of the claimed invention is observed at an angle opposite to the angle of incidence. In the case of a normal cyan pigment, a bronze phenomena that includes a color change from cyan to reddish appears at an angle of incidence of about -45° and a light-intercepting angle of 45°.

7. The angular dependency of color tone observed for Example 3 is significantly different than the angular dependency of color tone known for other cyan pigments. The angular dependency of color tone is substantially lower for Example 3 in comparison to Examples 1 and 2.

8. It is my opinion that the angular dependency of color tone of 30 (a-value) measured for Example 3 is significantly different than the angular dependency of color tone measured for Examples 1 and 2 which have values of 39 and 35, respectively.

9. It is further my opinion that it is not foreseeable that a significantly improved angular dependency of color tone would be obtained for an ink that contains the aqueous dispersion of the presently claimed invention which requires the presence of a water-insoluble vinyl polymer containing the monomer units recited in present Claim 1, including a macromeric monomer.

10. Measurements for the angular dependency of color tone are attached as Appendix A (four sheets). The measurements of Appendix A show that the angular dependency of color tone of the pigment C.I. Pigment Blue 15:4 is significantly different than the angular dependency of color tone for the pigment 15:3.

11. The last three charts of the Appendix compare the color properties of inks derived from the claimed invention for Examples 1, 2 and 3 mentioned above and disclosed in the specification of the present application. It is readily evident from a comparison of the color charts of the above-mentioned examples that the results for Example 3 are shifted substantially to the left relative to the color lines of Examples 1 and 2.

12. This means that a printed image prepared by an ink that is derived from the claimed invention will have a substantially improved color property. For example, the color will remain stable even if the printed image is observed at an angle. For the other examples a greater variation in color will be observed as the image is observed from different angles.

13. The above-described test of angular dependency of color tone is an art-recognized test and produces statistically significant results. Importantly, the results show that improved inks may be obtained from the claimed invention and that such inks may provide images that have stable color properties even when viewed at an angle.

14. I have reviewed and understood the scope of Claim 1. It is my opinion that there is no reason to believe that the use of a different macromer such as a silicone macromer in place of a styrenic macromer or the inclusion of greater amounts of the monomer (B) would provide an ink having substantially different properties from the ink described herein.

15. The undersigned petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under

Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

16. Further deponent saith not.

Signature

Isao Tsuru

Date

12. June. 2006

Customer Number

22850

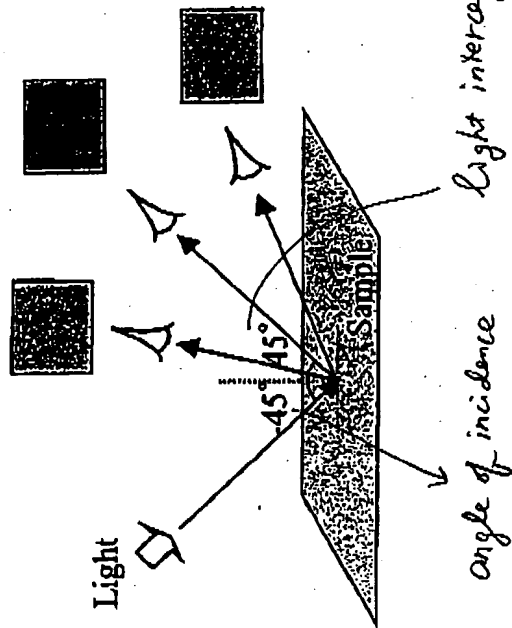
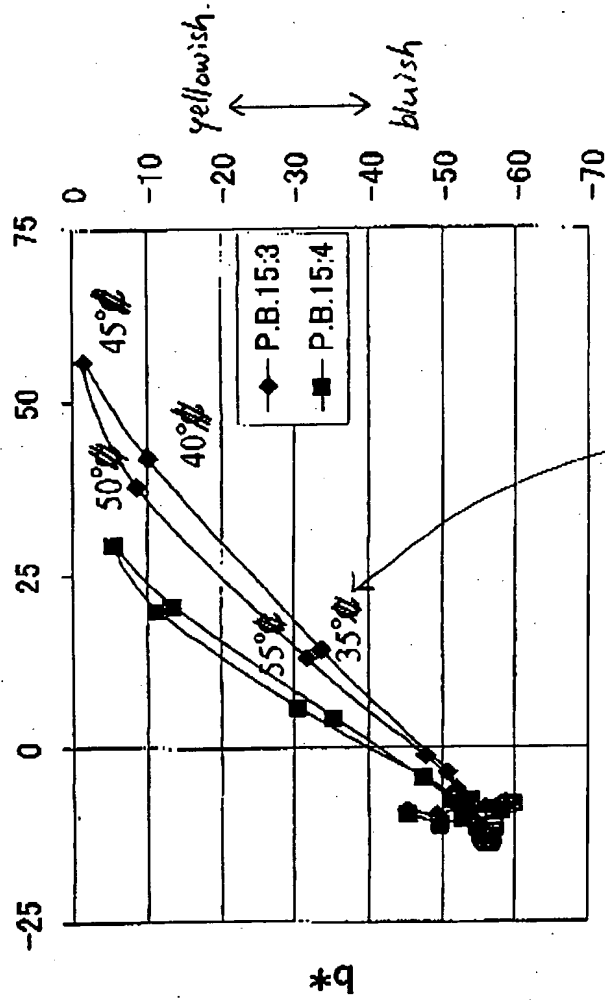
Tel. (703) 413-3000  
Fax. (703) 413-2220  
(OSM/MIN 05/04)

BEST AVAILABLE COPY

## APPENDIX A

greenish  $\longleftrightarrow$  reddish

Example3 Comp.1

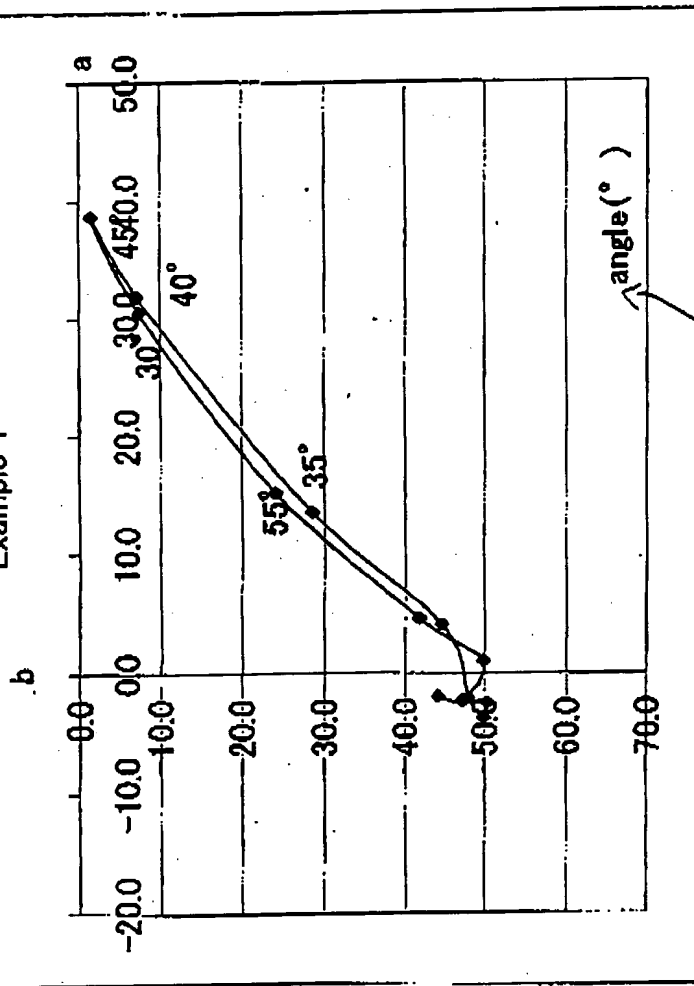


Light intercepting angle (°)



greenish  $\longleftrightarrow$  reddish

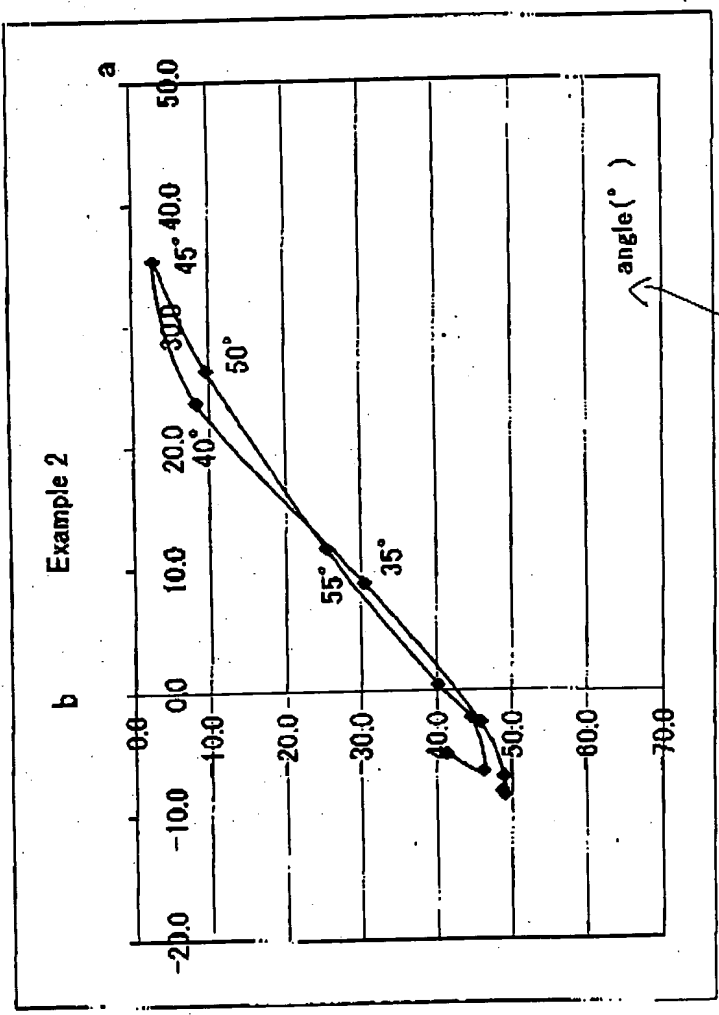
Example 1



yellowish  $\longleftrightarrow$  bluish

Light intercepting

greenish  $\longleftrightarrow$  reddish

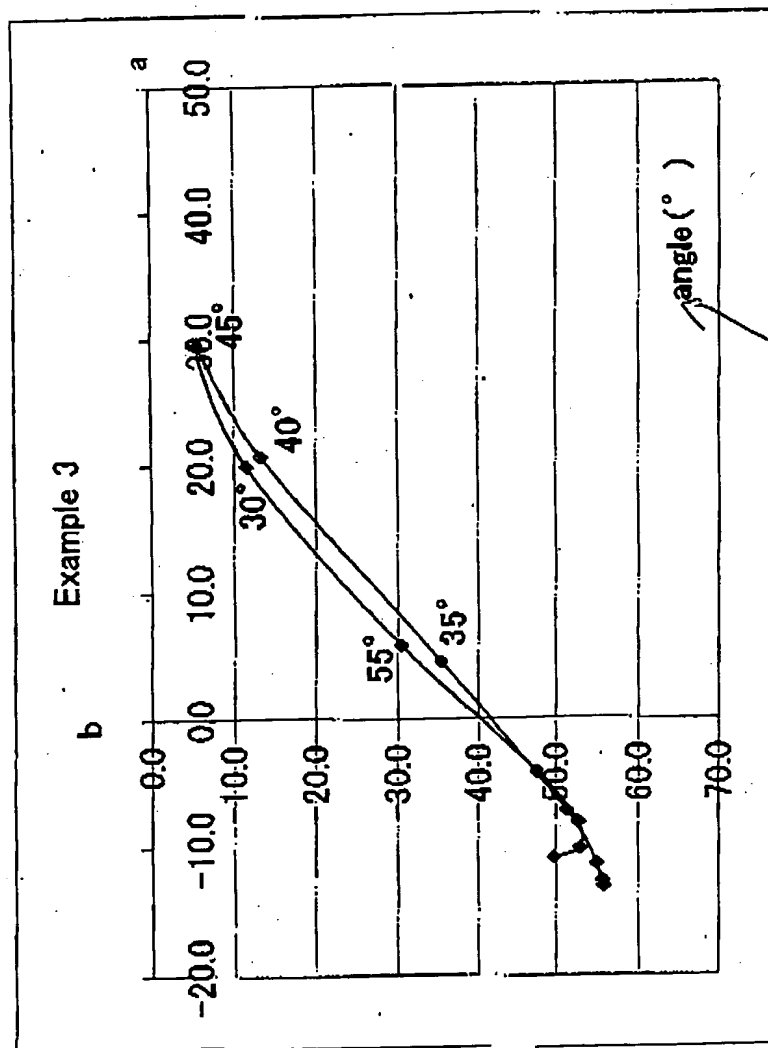


yellowish  $\longleftrightarrow$  bluish

light intercepting



greenish  $\longleftrightarrow$  reddish



yellowish  
↕  
bluish

light intercepting